

**REMARKS**

In the present Amendment, independent claim 7 has been amended to recite a diffusion prevention layer comprising a plating film selected from the group consisting of a nickel-tungsten-phosphorus plating film and a nickel-rhenium-phosphorus plating film.

Support for new claim 18 is found, for example, in the paragraph bridging pages 12 to 13 of the present specification.

Support for new claim 19 is found, for example, in the last full paragraph on page 13 of the present specification.

Applicants respectfully submit that entry after final is proper because, even following addition of the 2 new claims, only 6 claims are presently under consideration. Further, Applicants respectfully submit that entry after final is proper because the 2 new claims are dependent from claim 7, and are therefore patentable for at least the same reasons that claim 7 is patentable.

No new matter has been added, and entry of the Amendment is respectfully requested. After entry of the Amendment, claims 1-5, 7 and 9-19 will be pending.

**I. REJECTION UNDER 35 U.S.C. § 103**

In Paragraph 9 of the Office Action, claims 7-9 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 6,180,523 ("Lee").

Applicants traverse and respectfully request the Examiner to reconsider in view of the amendment to the claims and the following remarks.

Applicants' ULSI wiring is patentable over Lee, *at least* because Lee does not disclose or fairly suggest a diffusion prevention layer comprising a plating film selected from the group consisting of a nickel-tungsten-phosphorus plating film and a nickel-rhenium-phosphorus plating film, as is recited by present claim 7.

Instead, Lee only discloses a barrier layer composed of nickel (Ni), palladium (Pd), cobalt (Co) or alloys thereof. Lee's generic disclosure of "alloys" of Ni, Pd and Co cannot be said to teach, disclose or suggest the specific three-metal Ni alloys recited by present claim 7. Further, Lee's disclosure of one alloy, nickel-boron (Ni-B), does not suggest Applicants' diffusion prevention layer comprising a plating film composed of a Ni-W-P film or a Ni-Re-P film.

In view of the above, Applicants respectfully request reconsideration and withdrawal of the §103 rejection of claims 7-9 based on Lee.

## **II. REJECTION UNDER 35 U.S.C. § 103**

In Paragraph 10 of the Office Action, claims 8-11 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Lee in view of U.S. Patent No. 4,424,805 ("Neary") and Vuillaume et al (Applied Physics Letters, vol. 69, pages 1646-48, 1996) described by U.S. Patent Application Publication No. 2005/0056828 ("Wada").

Applicant respectfully traverses.

Claims 8-11 depend from independent claim 7 and are patentable at least by virtue of their dependency and the additional independent elements recited therein. Neary and Vuillaume

do not teach, disclose or suggest a diffusion prevention layer comprising a plating film composed of a Ni-W-P film or a Ni-Re-P film.

In addition, Applicants respectfully note that there is no reason to combine the teachings of the references in a manner that would render the present invention obvious. Lee discloses an adhesive layer that is different from the presently recited adhesive layer. Neary and Vuillaume disclose bonding material, but the bonding material therein is used in a different portion of the ULSI than the adhesive presently recited. Specifically, the adhesive presently recited is utilized between the first insulating layer and the diffusion prevention layer. The bonding material in Neary and Vuillaume is present in, for example, the gate insulating layer.

In view of the above, Applicants respectfully request reconsideration and withdrawal of the §103 rejection of claims 8-11 based on Lee, Neary and Vuillaume.

### **III. CLAIMS 18 & 19 ARE PATENTABLE OVER THE CITED REFERENCES**

Applicants kindly direct the Examiner's attention to new claims 18 and 19, which depend from independent claim 7. Applicants submit that claims 18 and 19 are patentable over the cited references at least by virtue of their dependency and the additional elements recited therein.

With respect to claim 18, Applicants point out that Lee does not disclose a specific composition for the barrier layer. For example, Lee simply discloses that the barrier layer may be Ni, Pd, Co or alloys thereof, without disclosing how much of each metal the barrier layer contains.

With respect to claim 19, Applicants point out that Lee discloses a barrier layer having a thickness of from 1800 to 2200 Å (i.e., 180 to 220 nm), which is outside of the scope of the thickness of Applicants' diffusion prevention layer of from 50 to 100 nm. See, e.g., Lee at col. 8, lines 53-54. Further, in embodiments 1, 2 and 3, Lee's barrier layer has a thickness of 2000 Å (200 nm).

Accordingly, Lee cannot be said to teach, disclose or suggest the diffusion prevention layers recited by claims 18 and 19.

### **III. CONCLUSION**

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

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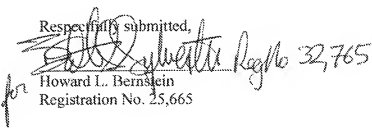
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**23373**

CUSTOMER NUMBER

Date: October 1, 2007

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